

REMARKS AND DISCUSSION

Upon entry of the present amendment, Claims 1-4 remain in the application, of which, Claims 1, 2 and 4 are independent. New claim 4 is being added by the present amendment.

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment B is submitted. It is contended that by the present amendment, all bases of rejection set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Amendments Presented

Applicant has amended the Abstract herein in order to overcome minor informalities such as to remove the legal phraseology "means", and to remove reference numerals.

Claims 1-3 have been amended herein to overcome minor informalities such as removing indefinite terms. Further, claim 1 has been amended herein to include select limitations of claim 2 in an effort to more clearly define that which applicant regards as the invention. Claim 2 has been rewritten herein in independent form. New claim 4 has been added herein which combines selected subject matter of original claims 1 and 3. Applicant respectfully submits that all of such amendments are fully supported by the original disclosure, including drawings. Applicant also respectfully submits that the amendments do not introduce any impermissible "new matter" into the application, as all of the subject matter of these amendments was expressly or inherently

disclosed in the specification as originally filed.

Objections

The Examiner has objected to the abstract of the disclosure because of the legalese “means”. The Examiner points out that proper language and format for an abstract of the disclosure indicates that the form and legal phraseology often used in patent claims, such as “means” and “said”, should be avoided. Appropriate correction is required.

Applicant’s Response

Applicant has carefully considered the Examiner’s objection and, based on the above amendments to the abstract, respectfully submits that the Examiner’s objection has been overcome. As such, it is respectfully requested that such rejection be reconsidered and withdrawn.

Claim Rejections – 35 USC 112

The Examiner has rejected claims 1-3 under 35 USC 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is the Examiner’s position that:

- In claims 1-3, terms such as “can be”, “so as”, “can”, “so that”, “be able to be” are considered to be indefinite since they do not positively claim the features.
- In claim 1, line 12, “said piston” is recited without identifying if said piston is said parking piston or said lock piston.

Applicant's Response

Applicant has carefully considered the Examiner's rejection of claims 1-3 and respectfully submits that, based on the present amendments to claims 1-3, the Examiner's rejection has been overcome. As such, applicant respectfully requests that such rejection be reconsidered and withdrawn.

As regards the Examiner's rejection of claim 1 going to the term "said piston" failing to identify which piston is being referenced, applicant has amended the claim to now state "said lock piston". As such, applicant respectfully requests that such rejection be reconsidered and withdrawn.

Claim Rejections – 35 USC 103

The Examiner has rejected claim 1 under 35 USC 103(a) as unpatentable over Sauter et al. (US 6,186,284). It is the Examiner's position that Sauter shows an automatic parking brake system comprising: a casing 102b, a parking piston 106 wherein a casing has a parking control fluid pressure chamber at 118 so that a parking brake state can be obtained by forward movement in response to a parking control fluid pressure acting on the parking control fluid pressure chamber; a lock mechanism 126 having a lock piston 142 which is slidably fitted into the casing so as to be capable of advancing or retreating relative to the parking piston, wherein said lock mechanism has a parking release control fluid pressure chamber 152 define therein between a front face of the lock piston 142 and the casing, and said lock piston is urged forward by a spring 130 and wherein the lock mechanism is configured and arranged to automatically lock in response to forward movement

of the parking piston in order to mechanically lock the parking piston at a forward position and to unlock in response to a parking release control fluid pressure acting on the parking release control fluid pressure chamber, column 5, a fluid pressure source 103, and a fluid pressure control mechanism means, column 4, lines 16-28 for controlling a fluid pressure generated by the fluid pressure source so that the parking control fluid pressure and the parking release control fluid pressure can be obtained and separately controlled.

Further, the Examiner states that in his view, Sauter shows the chamber at 118 to be between the casing and a body of the piston 106, while the claim requires the chamber to be defined by the rear face of the parking piston and the casing. The Examiner states that it appears to be a mere relocation of the chamber to the end of the casing instead of the middle of the casing 102b and that this relocation would not change the operation of the parking brake system. It is the Examiner's position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have relocated the chamber to the end of the casing instead of the middle of the casing of Sauter in order to accommodate certain space configuration requirement in the brake system; such relocation is obvious and would not change the operation of the parking brake system.

Applicant's Response

Applicant respectfully traverses the above ground of rejection and requests reconsideration and withdrawal of such rejection, based on the present amendments and arguments.

Applicant respectfully submits that, contrary to the Examiner's assertion, the disclosure of Sauter does not disclose or make obvious each and every limitation of the claimed invention. Specifically, Sauter fails to disclose or make obvious a parking control fluid pressure chamber defined between a rear face of the parking piston and the casing so that a parking brake state can be obtained by forward movement in response to a parking control fluid pressure acting on the parking control fluid pressure chamber or a parking release control fluid chamber defined between a front face of the lock piston and the casing wherein a locking mechanism is unlocked in response to a parking release control fluid pressure acting on the parking release control fluid pressure chamber.

Sauter discloses a parking brake system wherein a first piston (braking piston) 44 is coupled to a second piston (locking piston) 106, via a connector 108. The connector 108 is slidably received in a gasket 111 and seal 112 held by a stop ring 113. The piston 106 is in a chamber 114 of a housing 102. An apply port 118 in the housing 102 receives an apply fluid signal from a hose 101 and preferably from a pump 103. This fluid pressure is then applied to the left end of the piston 106 (the locking piston) and moves it to the left thereby pulling the piston 44 (braking piston) to apply the brakes. (See col. 4, lines 55-63) In order to overcome a locking mechanism of the parking brake a release pressure is applied to a release port 152. A fluid from the release port 152 moves a slide 126 to the left away from a stop 132. This allows the piston 106 to return to the right being pulled by the piston 44. Thus, both the pressured supplied through the apply port and the pressure applied to the release port act on the second (locking) piston 106. This is significantly different than the claimed invention wherein the pressure being supplied to the parking control fluid

pressure chamber acts on the braking piston and the pressure being supplied to the parking release control fluid pressure chamber is supplied to the locking piston.

According to the present invention, the parking actuators 12A and 12B include the parking piston 23, which is slidably fitted into the casing 22 so as to obtain a parking brake state by forward movement in response to a parking control fluid pressure acting on its rear face. In contrast, in the invention of Sauter, fluid pressure from an apply port 118 applies pressure on the left end of the piston 106 (the locking piston) which moves the piston 106 (the locking piston) and since the piston 106 is coupled to the (braking) piston 44, the piston 44 is pulled as the piston 106 is moved.

Furthermore, when the parking brake state is released, a parking release control fluid pressure is made to act toward the rear on the lock piston 24 to thus make the lock piston 24 retreat, and the lock mechanism 25 unlocks. This is different than the invention of Sauter, wherein when a pressure is supplied to the port 152, a slide 126 is moved to the left (away from a stop) thereby allowing the piston 106 (the locking piston) to be moved to the right. Thus, the pressure being supplied to the port 152 does not act directly on any portion of the locking piston, let alone the rear of the locking piston, as is required by the claimed invention.

Based on the foregoing, and the above amendment to claim 1, applicant respectfully submits that the Examiner's rejection has been overcome. As such, applicant respectfully requests that such rejection be reconsidered and withdrawn.

Claim Rejections – Double Patenting

The Examiner has rejected claims 1 and 2 as unpatentable over claim 1 of US 7,651,175, on the grounds of nonstatutory obviousness-type double patenting. Although the conflicting claims are not identical, according to the Examiner, they are not patentably distinct from each other because claim 1 of the patent encompasses claims 1 and 2 of the instant application.

The Examiner has provisionally rejected claims 1 and 2 on the grounds of nonstatutory obviousness-type double patenting as unpatentable over claim 1 of US Application 10/593,190. Although the conflicting claims are not identical, according to the Examiner, they are not patentably distinct from each other because claim 1 of the co-pending application encompasses claims 1 and 2 of the instant application.

The Examiner has rejected claim 1 on the grounds of nonstatutory obviousness-type double patenting as unpatentable over claim 1 of co-pending Application 10/593,403. Although the conflicting claims are not identical, according to the Examiner, they are not patentably distinct from each other because claim 1 of the co-pending application encompasses claim 1 of the instant application.

Applicant's Response

Applicant has carefully considered the Examiner's rejection and respectfully traverses such rejection, based on the present arguments.

The present application defines a basic automatic parking brake system comprising a lock mechanism. However, the inventions of the cited three cases are directed to improvements or

modifications of the structure surrounding such a lock mechanism.

As regards US Patent 7,651,175, such improvement is directed to the invention having a plurality of guide grooves (126) which are provided on the inner face of a large diameter hole (38) and shown in Figs. 5 and 6 thereof.

As regards US co-pending application No. 10/593,190, such improvement is directed to the invention having a plurality of guide grooves (125) which are provided on the outer face of an insertion shaft (59) and shown in Figs. 5 and 6 thereof.

As regards US co-pending application No. 10/593,403, such improvement is directed to the invention having a tool connection part (115) which is provided in a rear portion of the lock piston (56) and shown in Figs. 5 and 7 thereof.

The present invention as currently claimed do not include a plurality of guide grooves (such as US Patent 7,651,175), or a plurality of guide grooves (such as co-pending application No. 10/593,190), or a tool connection part (such as co-pending application No. 10/593,403).

Based on the foregoing, applicant respectfully submits that the Examiner's double-patenting rejections have been overcome. As such, applicant respectfully requests that such rejection be reconsidered and withdrawn.

Conclusion

Applicant respectfully suggests that as presently amended, all of the pending claims are in condition for allowance. It is applicant's contention that no possible reading of the references, either singly or in any reasonable combination, can be viewed as either teaching applicant's claimed

invention, or rendering applicant's invention obvious.

For all of the above mentioned reasons, applicant requests reconsideration and withdrawal of all rejections of record, and allowance of the pending claims.

Applicant respectfully submits that all of the above amendments are fully supported by the original application. Applicant also respectfully submits that the above amendments do not introduce any new matter into the application, since all of the subject matter thereof was expressly or inherently disclosed in the original specification, claims and drawings.

If the Examiner is not fully convinced of the patentability of all of the claims now in the application, or if the application could be expedited or otherwise assisted by a telephone discussion, applicant respectfully requests that the Examiner telephonically contact applicant's undersigned representative to resolve any issues remaining in the prosecution of the application.

Favorable consideration is respectfully requested.

Respectfully submitted,



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